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EXAMINER	
LU, KUEN S	

ART UNIT	PAPER NUMBER
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/800,311	HEUSERMANN ET AL.	
	Examiner	Art Unit	
	Kuen S. Lu	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Action is responsive to Applicant's Amendment filed March 19, 2007. Applicant's Amendment amending claims 1-2, 8, 13-14, 20, 25-26, 32 and 37 is acknowledged. Also acknowledged and approved is Terminal Disclaimer filed March 19, 2007. As necessitated by the Amendment, Examiner herby withdraws rejections to claims *1-7, 13-19, 25-31 and 37 under 35 U.S.C. § 101; rejections to* Claims 8, 20 and 32 under 35 U.S.C. §112, second paragraph; objections to Claims 8, 20 and 32; and nonstatutory obviousness-type double patenting rejections to Claims (1, 9-12), (13, 21-24) and (25,33-36).

2. Please note claims 1-37 are pending.

3. As to Applicant's Arguments/Remarks filed March 19, 2007, please see Examiner's response in "***Response to Arguments***" shown after Action for Final Rejection as shown next.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.1. Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al. (U.S. Patent 6,892,210, hereafter "Erickson"), in view of Archibald Jr. et al. (U.S. Patent 6,892,210, hereafter "Archibald"), hereafter "Archibald Jr."), and further in view of Chen et al. (U.S. Patent 6,993,522, hereafter "Chen").

As per claims 1 and 25, Erickson teaches a method or program product for checking data consistency of data objects of distributed systems within a computer network (See Abstract where synchronization program is implemented on peer to peer network architecture for data object synchronization), comprising:

"receiving in a second system a copy of a first data object stored in a first system" (See col. 4, lines 5-40 where data records are synchronized from a system to another);

"storing the copy of the first data object within the second system" (See Figs. 1A-1B and col. 8, line 59 – col. 9, line 11 where duplicate record embedded in sync object are sent to another system to store);

"generating a second data object from the copy of the first data object" (See col. 8, lines 40-55 where sync object is created);

"sending the second data object and the copy to the first system" (See col. 10, lines 35-45 where user computer changes record, creates sync object and sends the object to Sync Computer for qualifying the change); and

"comparing at least one data package of the first data object with at least one data package of the copy of the first data object sent by the second system" (See col. 19,

lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined).

Erickson does not explicitly teach that the determination is done by using "a consistency check operation stored within the first data object, the second data object, or the copy of the first data object", although Erickson teaches providing for more efficient communication and greater control of data consistency while sharing flexibility and scalability of a peer-to-peer architecture (See col. 2, lines 45-58).

However, Archibald Jr. teaches performing data consistency check of parity data inconsistencies during data operations at Figs. 2-3, col. 1, lines 18-20 and col. 4, lines 57-65.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Archibald Jr. with Erickson reference because both references are directed to data consistency check where Erickson focuses on data consistency check on data synchronized on a peer-to-peer network computers while Archibald Jr. implements an overall device data consistency check and the combined teaching would how allowed peer-to-peer network to check data consistency in a large scale and a more efficient manner.

Concerning "determining, based on the comparison, whether to merge the at least one data package of the first data object and the at least one data package of the copy of the first data object" and "merging the data packages based on the determination", the combined teaching of the Archibald and Erickson references does not explicitly teach the limitations.

However, Chen teaches comparing if the different syncable properties of data objects are mergeable properties and merging data objects if the properties are mergeable at col. 9, lines 46-52 and col. 10, lines 25-31.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine the teaching of Chen with Archibald Jr. and Erickson references because both Chen and Erickson are directed heavily on data synchronization where Archibald Jr. stresses reducing data operation time while Chen focuses on conflict resolution for un-synchronized data, and the combined teaching would have enabled system of Archibald Jr. balanced on both operation efficiency and data integrity.

As per claim 13, Erickson teaches "A method for checking data consistency of data objects of distributed systems within a computer network" (See Abstract where synchronization program is implemented on peer to peer network architecture for data object synchronization), comprising:

"sending a first data object from a first system to a second system" (See col. 4, lines 5-40 where data records are synchronized from a system to another);

"storing a copy of the first data object within the first system" (See Figs. 1A-1B and col. 8, line 59 – col. 9, line 11 where duplicate record embedded in sync object are sent to another system to store);

"generating a second data object from the first data object" (See col. 8, lines 40-55 where sync object is created);

"sending the second data object to the first system" (See col. 10, lines 35-45 where user computer changes record, creates sync object and sends the object to Sync Computer for qualifying the change); and

"comparing a data package of the copy of the first data object as originally stored with a data package of the second data object sent by the second system" (See col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined).

Erickson does not explicitly teach that the determination is done by using "a consistency check operation stored within the first data object, the second data object, or the copy of the first data object", although Erickson teaches providing for more efficient communication and greater control of data consistency while sharing flexibility and scalability of a peer-to-peer architecture (See col. 2, lines 45-58).

However, Archibald Jr. teaches performing data consistency check of parity data inconsistencies during data operations at Figs. 2-3, col. 1, lines 18-20 and col. 4, lines 57-65.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Archibald Jr. with Erickson reference because both references are directed to data consistency check where Erickson focuses on data consistency check on data synchronized on a peer-to-peer network computers while Archibald Jr. implements an overall device data consistency check and the combined teaching would how allowed peer-to-peer network to check data consistency in a large scale and a more efficient manner.

Concerning "determining, based on the comparison, whether to merge the data package of the second data object and the data package of the copy of the first data object" and "merging the data packages based on the determination", the combined teaching of the Archibald and Erickson references does not explicitly teach the limitations.

However, Chen teaches comparing if the different syncable properties of data objects are mergeable properties and merging data objects if the properties are mergeable at col. 9, lines 46-52 and col. 10, lines 25-31.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine the teaching of Chen with Archibald Jr. and Erickson references because both Chen and Erickson are directed heavily on data synchronization where Archibald Jr. stresses reducing data operation time while Chen focuses on conflict resolution for un-synchronized data, and the combined teaching would have enabled system of Archibald Jr. balanced on both operation efficiency and data integrity.

As per claim 37, Erickson teaches "A computer system for checking data consistency of data objects of distributed systems within a computer network, the system" (See Abstract where synchronization program is implemented on peer to peer network architecture for data object synchronization) comprising:

"a first system having a first data object ~~connected to a second system~~" (col. 4, lines 5-40 where data records are with each system);

"a second system connected to the first system" (See Figs. 1A-1B and Abstract where a network connects a pool of computer systems);

"wherein the second system receives a copy of the first data object from the first system, stores the copy of the first data object, generates a second data object from the first data object, and sends the second data object and the copy of the first data object to the first system, which ~~the first system being configured to send a first data object to the second system, to receive a second data object~~" (See col. 4, lines 5-40 where data records are synchronized from a system to another; and at Figs. 1A-1B and col. 8, line 59 – col. 9, line 11 where duplicate record embedded in sync object are sent to another system to store), and "~~to compare~~ compares at least one data package of the first data object with at least one data package of the copy of the first data object received by the first system" (See col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined).

Erickson does not explicitly teach that the determination is using "a consistency check operation stored within the first data object, the second data object, or the copy of the first data object".

However, Archibald Jr. teaches performing data consistency check of parity data inconsistencies during data operations at Figs. 2-3, col. 1, lines 18-20 and col. 4, lines 57-65.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine the teaching of Archibald Jr. with Erickson

reference because both references are directed to data consistency check where Erickson focuses on data consistency check on data synchronized on a peer-to-peer network computers while Archibald Jr. implements an overall device data consistency check and the combined teaching would how allowed peer-to-peer network to check data consistency in a large scale and a more efficient manner.

Concerning "determines, based on the comparison, whether to merge the at least one data package of the first data object and the at least one data package of the copy of the first data object" and " merges the data packages based on the determination", the combined teaching of the Archibald and Erickson references does not explicitly teach the limitations.

However, Chen teaches comparing if the different syncable properties of data objects are mergeable properties and merging data objects if the properties are mergeable at col. 9, lines 46-52 and col. 10, lines 25-31.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to further combine the teaching of Chen with Archibald Jr. and Erickson references because both Chen and Erickson are directed heavily on data synchronization where Archibald Jr. stresses reducing data operation time while Chen focuses on conflict resolution for un-synchronized data, and the combined teaching would have enabled system of Archibald Jr. balanced on both operation efficiency and data integrity.

As per claims 5, 17 and 29, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the data object comprises a plurality of data packages" (See Erickson: Fig. 3A and col. 11, lines 8-15 where each record in database table is interpreted as a data package in a data object).

As per claims 9, 21 and 33, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the consistency check operation compares object data included within the data packages and characterizes the data objects as consistent in the event that all object data are consistent" (See Erickson: col. 19, line 62 – col. 20, line 32 where data object is accepted when the match is identical).

As per claims 10, 22 and 34, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the consistency check operation compares object data included within the data packages and characterizes the data objects as consistent in the event that at least some of the object data are consistent" (See Erickson: col. 19, line 66 – col. 20, line 67 where data object is accepted when data objects matches some condition in the comparison).

As per claims 2, 14 and 26, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the first data object and the second data object are processed" (See Erickson: col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is

determined) and "according to a reaction, dependent on the consistency check operation, ~~and~~ stored within the first data object, the second data object, or the copy of the first data object (See Archibald Jr.: col. 1, lines 35-52).

As per claims 3, 15 and 27, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "storing, within the copy, a system identifier that identifies the first data object, an originating system of the first data object, or the first data object and the originating system of the first data object" (See Archibald Jr.: col. 1, lines 35-52 where consistency check is perform on data stripe and parity data is stored in the data stripe).

As per claims 4, 16 and 28, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "object status information is stored within the copy" (See Archibald Jr.: col. 1, lines 35-52 where consistency check is perform on data stripe and parity data is stored in the data stripe).

As per claims 6, 18 and 30, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the data packages are compared sequentially" (See Erickson: col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined, and Archibald Jr.: col. 1, lines 35-52 where consistency check is perform sequentially on data stripe and parity data is stored in the data stripe).

As per claims 7, 19 and 31, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "the data packages are compared hierarchically" (See Erickson: col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined, and Archibald Jr.: col. 26, item 7 where data storage management is hierarchical).

As per claims 8, 20 and 32, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "a consistency check operation description and at least one reaction are stored within ~~the compared~~ a data package to be compared, wherein the data package to be compared can be a data package of the first data object, the second data object, or the copy of the first data" (See Archibald Jr.: col. 1, lines 35-52 where consistency check is perform on data stripe and parity data is stored in the data stripe, and Chen: col. 9, lines 46-52 and col. 10, lines 25-31 teaches comparing if the different syncable properties of data objects are mergeable properties and merging data objects if the properties are mergeable).

As per claims 11, 25 and 35, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "executing a reaction in the event that that the consistency check operation characterizes the data objects as consistent, wherein the reaction includes an action selected from the group consisting of:

"merging the second data object into the first data object, marking the first data object for review, marking the second data object for review, marking the first data object and the second data object for review, marking the packages of the data objects for review, and replacing the first data object with the second data object" (See Erickson: col. 19, lines 55-65 where col. 19, lines 55-65 where the match between fields lists of sync object and the list contained in receive sync profile is determined, and Archibald Jr.: col. 1, lines 35-52 where consistency check is perform on data stripe and parity data is stored in the data stripe).

As per claims 12, 24 and 36, the combined teaching of Chen, Archibald Jr. and Erickson references further teaches "executing a reaction in the event that the consistency check operation does not characterize the data objects as consistent, wherein the reaction includes an action selected from the group consisting of: canceling the second data object, and the copy of the first data object, marking the first data object for review, marking the second data object for review, marking the first data object and the second data object for review, marking the packages of the data objects for review, replacing the first data object with the second data object, and maintaining the first data object unchanged" (See col. 19, lines 63-65 data object is not accepted if objects are not matched in comparison, and Archibald Jr.: col. 1, lines 35-52 where consistency check is perform on data stripe and parity data is stored in the data stripe).

Response to Arguments

5. Applicant's arguments filed March 19, 2007 with respect to claims 1-37 have been fully considered. Concerning limitations of "determining, based on the comparison, whether to merge the at least one data package of the first data object and the at least one data package of the copy of the first data object" and "merging the data packages based on the determination", the combined teaching of the Archibald and Erickson references does not explicitly teach the limitations" or similar ones amended to claims 1, 13, 25 and 37, Examiner has respectfully introduced the Chen reference to provide the teaching for the newly added limitations. Also please note Examiner respectfully re-cited Archibald reference for teaching consistency check for data objects.

References

6.1. The prior art made of record

A. U.S. Patent No. 6,892,210

B. U.S. Patent No. 6,918,006

F. U.S. Patent No. 6,993,522

6.2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

C. U.S. Patent Application 2005/0033828

D. U.S. Patent Application 2002/0169995

E. U.S. Patent No. 4,789,986

G. U.S. Patent No. 6,859,455

H. U.S. Patent No. 6,954,765

Conclusion

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1 .136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S. Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:00 am-5:00 pm). If attempts to reach the examiner by telephone pre unsuccessful, the examiner's Supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 703-305-3900.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 703-305-3900 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, please call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kuen S. Lu,

Patent Examiner, Art Unit 2167

May 13, 2007

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